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REMARKS

Claims 53, 56, 67 and 68 are rejected, under 35 U.S.C. § 103(a), as being unpatentable over Christian et al. '791 (U.S. Patent No. 5,267,791) in view of Winston et al. '354 (U.S. Patent No. 4,851,354). The Applicant acknowledges and respectfully traverses the raised obviousness rejection in view of the above amendments and the following remarks.

The Applicant notes that Christian et al. '791 arguable many of the basic elements recited in the pending claims. However, as correctly noted by the Examiner, Christian et al. '791 fails to in any way teach, suggest, disclose or remotely hint at the presently claimed pressurization means. In order to attempt to address this deficiency in Christian et al. '791, the Examiner combines the teaching of Winston et al. '354 with the teaching of Christian et al. '791.

Turning now to the applied Winston '354, this reference, like the present invention, relates to a device for simulating the natural, *in vivo*, environment of biological cells. However, Winston '354 and the present invention are fundamentally distinct from one another with regard to the structure used to simulate the *in vivo* pressure conditions of the cells. Winston '354, for example, comprises an air-tight well 20 having a compliant base of a biologically compatible material where cells are grown thereon, a cap 10, and a ported air-tight reservoir located beneath the compliant base. The reservoir can be filled with a pressurizing medium. However, as indicated column 1, lines 55-57 for example, the pressurizing medium primarily serves to cause the compliant base "to deform and thereby exert a substantially uniform biaxial strain on the cells attached thereto." (Emphasis added).

Conversely, the presently claimed invention, on the other hand, is not directed at subjecting the cells to a biaxial strain, rather the pressure means is directed at subjecting the cells to conditions where, as disclosed in paragraph [082], "an alternating pressure load is exerted all round from outside" on the cells-see new claim 78. To achieve this, the pressurizing means, which exerts the pressure load on the cells, is completely separate, distinct and independent of the culture medium. It is respectfully submitted that a *fluid* pressure exerted "all round" is fundamentally distinct from a mere "biaxial strain" as specifically taught, suggested and disclosed by Christian et al. '791.

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It is to be appreciated that the present invention accomplishes the "all round" pressure on the cells in several ways, see paragraphs [082] and [083], for example. The embodiments comprise a receptacle 1 which is made pressure-tight by a lid 3 and a base with a pressurizing means, e.g., hydraulic or pneumatic, being located within the receptacle 1 (see claim 80). One embodiment includes a movable film or membrane disposed, between the cells and the pressurizing means, such that when the fluid or gas is pressurized, the film or membrane transmits the pressure onto the culture medium and the cells in an "all round" manner (see claim 79). Another embodiment disposes a balloon on the inner side of all the walls of the receptacle, with the cells and the culture medium situated inside the balloon (see claim 81). When the balloon is pressurized, the cells and the culture medium are acted upon by a pressure from "all round." According to a still further embodiment, the cells are placed within a gel (e.g., the culture medium) that transmits "all round" pressure onto the cells (see claim 82).

In view of the forgoing amendments and remarks, it is respectfully submitted that the raised rejection in view of Christian et al. '791 should be withdrawn at this time.

In order to further distinguish the present invention from the applied art, the pending claims are amended to emphasize the above noted distinctions. In particular, independent claim 67 now recites the feature of "a pressurizing means is located within a structure of the receptacle (1) for exerting fluid pressure on both the culture medium and the cells (7) being cultivated within the device so that a pressure load is exerted on the cells all round from outside." It is respectfully submitted that "fluid pressure" which is applied "all round" the cells is not equivalent to the "biaxial strain" of Winston '354, and vice versa, and thus claim 67 is patentably distinguished over and from over the combination of Christian et al. '791 in view of Winston '354.

In addition, since claims 53, 56 and 58 each depends from independent claim 67, it is respectfully submitted that each of those dependent claims contains all the limitations of claim 67 and are thus are patentably distinguishable over the prior art of Christian et al. '791 for the same reasons articulated with respect to claim 67. Further, new claims 77-82 recited additional limitations which are not in any way taught suggested, disclosed or remotely hinted at by any permissible combination of Christian et al. '791 and/or Winston '354.

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Next, claim 54 is rejected, under 35 U.S.C. § 103(a), as being unpatentable over Christian et al. '791 in view of Winston et al. '354 and in further view of Hung et al. '625 (U.S. Publication No. 2002/0106625). The Applicant acknowledges and respectfully traverses the raised obviousness rejection in view of the above amendments and the following remarks.

The Applicant acknowledges that the additional references of Hung '625 may arguably relate to the feature(s) indicated by the Examiner in the official action. Nevertheless, the Applicant respectfully submits that the combination of the base references of Christian et al. '791 and Winston et al. '354 and with this additional art of Hung '625 still fails to in any way teach, suggest or disclose the above distinguishing features of the presently claimed invention. As such, all of the raised rejections should be withdrawn at this time in view of the above amendments and remarks.

If any further amendment to this application is believed necessary to advance prosecution and place this case in allowable form, the Examiner is courteously solicited to contact the undersigned representative of the Applicant to discuss the same.

In view of the above amendments and remarks, it is respectfully submitted that all of the raised rejection(s) should be withdrawn at this time. If the Examiner disagrees with the Applicant's view concerning the withdrawal of the outstanding rejection(s) or applicability of the Christian et al. '791, Winston et al. '354 and/or Hung et al. '625 references, the Applicant respectfully requests the Examiner to indicate the specific passage or passages, or the drawing or drawings, which contain the necessary teaching, suggestion and/or disclosure required by case law. As such teaching, suggestion and/or disclosure is not present in the applied references, the raised rejection should be withdrawn at this time. Alternatively, if the Examiner is relying on his/her expertise in this field, the Applicant respectfully requests the Examiner to enter an affidavit substantiating the Examiner's position so that suitable contradictory evidence can be entered in this case by the Applicant.

In view of the foregoing, it is respectfully submitted that the raised rejection(s) should be withdrawn and this application is now placed in a condition for allowance. Action to that end, in the form of an early Notice of Allowance, is courteously solicited by the Applicant at this time.

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The Applicant respectfully requests that any outstanding objection(s) or requirement(s), as to the form of this application, be held in abeyance until allowable subject matter is indicated for this case.

In the event that there are any fee deficiencies or additional fees are payable, please charge the same or credit any overpayment to our Deposit Account (Account No. 04-0213).

Respectfully submitted,


Michael L. Bujold, Reg. No. 32,018
Customer No. 020210
Davis & Bujold, P.L.L.C.
112 Pleasant Street
Concord, NH 03301-2931
Telephone 603-226-7490
Facsimile 603-226-7499
E-mail: patent@davisandbujold.com

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